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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/798,996	03/11/2004	Karen Attenborough	99-481-A	6849

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EXAMINER
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SMITH, NICHOLAS A

ART UNIT	PAPER NUMBER
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1742

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/20/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

Application No.

10/798,996

Applicant(s)

ATTENBOROUGH ET AL.

Examiner

Nicholas A. Smith

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 20 February 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 37-46, 48, 50, 52, 55, 56, 58 and 60 is/are pending in the application.
- 4a) Of the above claim(s) 50, 52, 55, 56, 58 and 60 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 37-46 and 48 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☒ Certified copies of the priority documents have been received in Application No. 10/798,996.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 3/11/04, 9/10/04.

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election without traverse of Species I (claims 37-46 and 48) in the reply filed on 20 February 2007 is acknowledged.

### **Status of Claims**

2. Claims 37-46 and 48 remain for examination. Claims 50, 52, 55-56, 58 and 60 are withdrawn from consideration.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 37-40 are rejected under 35 U.S.C. 102(e) as being anticipated by Moodera et al. (US 5,835,314).
5. In regards to claim(s) 37-40, Moodera et al. discloses a method of electrodepositing a spin-valve structure as claimed (Fig. 1, col. 5, lines 17-67). Furthermore, it is noted that while vacuum evaporation may be a preferred process, electroplating is a suitable process to form the layers (col. 5, lines 57-60). In addition, a

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barrier is formed between the semiconductor substrate and the first ferromagnetic layer (col. 5, lines 35-38).

6. Claims 37-46 are rejected under 35 U.S.C. 102(b) as being anticipated by Hart et al., "Giant Magnetoresistance in Ni-Co-Cu/Cu Superlattices Electrodeposited on N-Type (100) GaAs Substrates", Proc. of the 3rd Int. Sym. On Magnetic Materials, Processes and Devices (New Orleans) 94, 215-221, 1993, Electrochemical Society as submitted on 11 March 2004 in Applicant's Information Disclosure Statement.

7. In regards to claim(s) 37-46, Hart et al. discloses a method of electrodepositing a spin-valve structure as claimed, including multilayered structures, at a specific potential, in a single electrolyte bath and changing the substrate surface structure before electrodepositing spin-valve structure (pp. 1-2). Furthermore, a barrier is formed between the semiconductor substrate and the first ferromagnetic layer in that the substrate has a lower conductivity than the first ferromagnetic layer (pp. 1-2).

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claim 48 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hart et al. in view of Shibasaki et al. (US 4,251,795).

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10. In regards to claim(s) 48, Hart et al. discloses electrodepositing a spin-valve structure on a substrate, but does not specifically disclose using the spin-valve structure as a sensing-element for contactless position, distance and movement sensing.

11. Shibasaki et al. discloses using a magnetosensitive element for contactless position, distance and movement sensors (col. 8, lines 21-43). It would have been obvious to one of ordinary skill in the art to modify Hart et al.'s method with Shibasaki et al. use of magnetosensitive elements in order to adapt to various applications and to provide a sensor (Shibasaki et al., col. 8, lines 21-43).

### ***Conclusion***

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nicholas A. Smith whose telephone number is (571)-272-8760. The examiner can normally be reached on 8:30 AM to 5:00 PM, Monday through Friday.

13. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571)-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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14. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

NAS

ROY KING  
SUPERVISING PATENT EXAMINER  
JAN 14 2009 1700